LABORATORY BALANCES

2013

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UYA.3Y

- Filling
- Checkweighing
- Percentage
- Statistics
- Formulation
- Air buoyancy correction
- GLP procedures
- Infrared sensors
- Comparative weighing
- Alibi memory

• Electronic level indicator
• Infrared proximity sensors

• Model UYA 2/F

• Data exchange through USB storage devices

• Communicationinterfaces: Ethernet, USB (2 ports), RS232

Ultra accuracy 0,1 µg!

Microbalances of UYA type have been designed on the basis of new electronic modules and the latest technology. Measurement reliability and accuracy is ensured by internal calibration. Microbalances consist of two major parts (an electronic system and a precise mechanical measurement system) in separate housings - this solution eliminates the temperature influence and separates from shocks and vibrations caused by users operating software. All the elements of the balance are made of glass and steel which eliminates the influence of electrostatics on the weighing process. Balances feature 5.7"colour touch screen panel with new software for the highest convenience of use!

Model		M	Max	d	e	Pan size			
UYA 2.3Y	•	•	2 g	0,1 µg	1 mg	ø16 mm			
UYA 2.3Y.F	•	•	2 g	0,1 µg	1 mg	ø 50 mm			

• *internalcalibration*

MYA.3Y

- Filling
- Checkweighing
- Percentage
- Statistics
- Formulation
- Air buoyancy correction
- GLP procedures
- Infrared sensors
- Comparative weighing
- Alibi memory

• Electronic level indicator
• Infrared proximity sensors

• Colorful touch-screen panel 5,7”

• Data exchange through USB storage devices

• Communicationinterfaces: Ethernet, USB (2 ports), RS232

Microbalances of MYA type have been designed on the basis of new electronic modules and the latest technology. Measurement reliability and accuracy is ensured by internal calibration. Microbalances consist of two major parts (an electronic system and a precise mechanical measurement system) in separate housings - this solution eliminates the temperature influence and separates from shocks and vibrations caused by users operating software. All the elements of the balance are made of glass and steel which eliminates the influence of electrostatics on the weighing process. Balances feature5.7”colour touch screen panel with new software for the highest convenienceof use!

Model		M	Max	d	e	Pan size
MYA 2.3Y	•	•	2 g	1 µg	1 mg	ø16 mm
MYA 0.8/3.3Y	•	•	0,8/3 g	1/10 µg	1 mg	ø16 & 60 mm
MYA 5.3Y	•	•	5 g	1 µg	1 mg	ø26 mm
MYA 11.3Y	•	•	11 g	1 µg	1 mg	ø26 mm
MYA 21.3Y	•	•	21 g	1 µg	1 mg	ø26 mm

internal calibration

Microbalances for calibration of pipettes

MYA.3Y.P

- Filling
- Checkweighing
- Percentage
- Statistics
- Formulation
- Air buoyancy correction
- GLP procedures
- Infrared sensors
- Comparative weighing
- Alibi memory
- Pipette calibration*

** Function only available as an extra option of the software*

• Electronic level indicator
• Infrared proximity sensors

• Colorful touch-screen panel 5,7”

• Data exchange through USB storage devices

• Communicationinterfaces: Ethernet, USB (2 ports), RS232

Microbalances of MYA type have been designed on the basis of new electronic modules and the latest technology. Measurement reliability and accuracy is ensured by internal calibration. Microbalances consist of two major parts (an electronic system and a precise mechanical measurement system) in separate housings - this solution eliminates the temperature influence and separates from shocks and vibrations caused by users operating software. All the elements of the balance are made of glass and steel which eliminates the influence of electrostatics on the weighing process. Balances feature 5.7”colour touch screen panel with new software for the highest convenience of use! They are provided with the special kit for calibration of pipettes and additional standard pan.

Model		M	Max	d	e	Pan size			
MYA 21.3Y.P	•	•	21 g	1 µg	1 mg	Ø 26 mm			
Pipettes – PC software									

internal Calibration

More information about workstation for pipette calibration on page 45

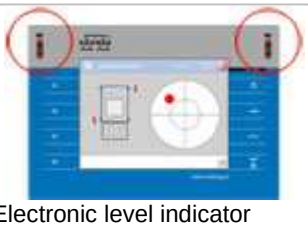
Microbalances for filter weighing

MYA.3Y.F

MYA/2Y 5/F

MYA/2Y 5/F1

- Filling
- Checkweighing
- Percentage
- Statistics
- Formulation
- Air buoyancy correction
- GLP procedures
- Infrared sensors
- Comparative weighing
- Alibi memory



• Electronic level indicator
• Infrared proximity sensors

• Model MYA 5/F1

• Data exchange through USB storage devices

• Communicationinterfaces: Ethernet, USB (2 ports), RS232

• Special chamber with a pan for filter weighing

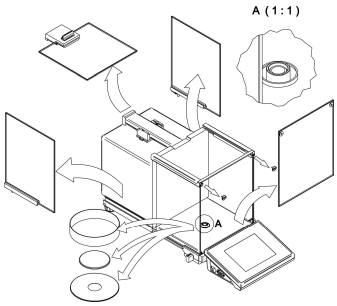
Microbalances of MYA series have been designed on the basis of new electronic modules and the latest technology. Measurement reliability and accuracy is ensured by internal calibration. Microbalances consist of two major parts (an electronic system and a precise mechanical measurement system) in separate housings - this solution eliminates the temperature influence and separates from shocks and vibrations caused by users operating software. All the elements of the balance are made of glass and steel which eliminates the influence of electrostatics on the weighing process. Balances feature 5.7” colour touch screen panel with new software for the highest convenience of use!

Model		M	Max	d	e	Pan size
MYA 5.3Y.F	•	•	5 g	1 µg	1 mg	ø100 mm
MYA 5.3Y.F1	•	•	5 g	1 µg	1 mg	ø160 mm

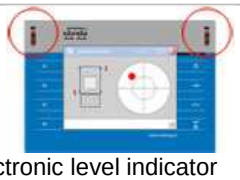
internalcalibration

XA.3Y

PROFESSIONAL LEVEL



- Parts counting
- Filling
- Animal weighing
- Density determination
- Checkweighing
- Percentage
- Statistics
- Formulation
- Air buoyancy correction
- Under-hook weighing
- GLP procedures
- Infrared sensors
- Comparative weighing
- Alibi memory
- Pipette calibration



• Electronic level indicator
• Infrared proximity sensors

• Colorful touch-screen panel 5,7”

• Data exchange through USB storage devices

• Communicationinterfaces: Ethernet, USB (2 ports), USB B type; RS232

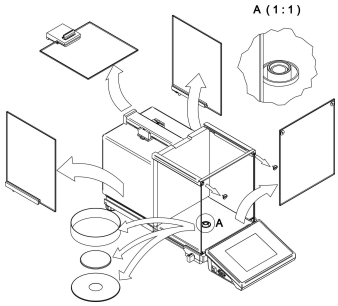
Analytical balances of XA.3Y type have been designed on the basis of new electronic modules and the latest technology. Measurement reliability and accuracy is assured by internal calibration triggered by time flow or temperature conditions. Balances are equipped with spacious weighing chamber with manually opened side glass doors.
XA.3Y balances feature 5.7” colour touch screen panel with new software for the highest convenience of use!

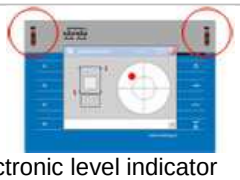
Model		M	Max	d	e	Pan size			
XA 52.3Y	•	•	52 g	0,01 mg	1 mg	ø85 mm			
XA 110.3Y	•	•	110 g	0,01 mg	1 mg	ø85 mm			
XA 210.3Y	•	•	210 g	0,01 mg	1 mg	ø85 mm			
XA 82/220.3Y	•	•	82/220 g	0,01/0,1 mg	1 mg	ø85 mm			
XA 220.3Y	•	•	220 g	0,1 mg	1 mg	ø100 mm			
XA 310.3Y	•	•	310 g	0,1 mg	1 mg	ø100 mm			
XA 510.3Y	•		510 g	0,1 mg		ø100 mm			

internalcalibration

XA.3Y.A

PROFESSIONAL LEVEL





- Electronic level indicator
- Infrared proximity sensors

- Colorful touch-screen panel 5,7”

- Data exchange through USB storage devices

- Communicationinterfaces: Ethernet, USB (2 ports), USB B type, RS232

Analytical balances XA.3Y.A type have been designed on the basis of new electronic modules and the latest technology. Measurement reliability and accuracy is assured by internal calibration triggered by time flow or temperature conditions. Balances are equipped with spacious weighing chamber with **automatically opened side glass doors.**
XA.3Y balances feature 5.7” colour touch screen panel with new software for the highest convenience of use!

- Parts counting
- Filling
- Animal weighing
- Density determination
- Checkweighing
- Percentage
- Statistics
- Formulation
- Air buoyancy correction
- Under-hook weighing
- GLP procedures
- Infrared sensors
- Comparative weighing
- Alibi memory
- Pipette calibration

Model		M	Max	d	e	Pan size			
XA 52.3Y.A	•	•	52 g	0,01 mg	1 mg	ø85 mm			
XA 110.3Y.A	•	•	110 g	0,01 mg	1 mg	ø85 mm			
XA 210.3Y.A	•	•	210 g	0,01 mg	1 mg	ø85 mm			
XA 82/220.3Y.A	•	•	82/220 g	0,01/0,1 mg	1 mg	ø85 mm			
XA 220.3Y.A	•	•	220 g	0,1 mg	1 mg	ø100 mm			
XA 310.3Y.A	•	•	310 g	0,1 mg	1 mg	ø100 mm			
XA 510.3Y.A	•		510 g	0,1 mg		ø100 mm			

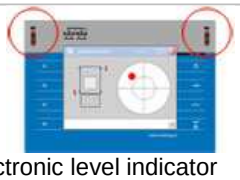
Analytical balances

XA.3Y.F

PROFESSIONAL LEVEL

XA 3Y.F also functions as a standard analytical balance

CE M



• Electronic level indicator
• Infrared proximity sensors

• Colorful touch-screen panel 5,7”

• Data exchange through USB storage devices

• Communicationinterfaces: Ethernet, USB (2 ports), USB B type, RS232

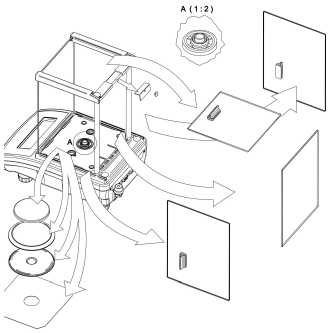
- Parts counting
- Filling
- Animal weighing
- Density determination
- Checkweighing
- Percentage
- Statistics
- Formulation
- Air buoyancy correction
- Under-hook weighing
- GLP procedures
- Infrared sensors
- Comparative weighing
- Alibi memory
- Pipette calibration

Balances XA 3Y.F series are designed for weighing large filters. The balance features a spacious weighing chamber and a weighing pan dedicated for weighing filters with maximum dimensions 210×260 mm. As replacement to the pan for weighing filters, balance user can apply a standard weighing pan for regular weighing process. In the weighing chamber and over the weighing pan there is a large draft shield made of conducting glass for discharging static electricity. In addition, it functions as a anti draft protection. The weighing chamber comprises sliding side and top glass doors. XA 3Y.F series features big backlit graphic display with extended menu.

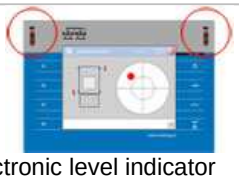
Model		M	Max	d	e	Pan size			
XA 52.3Y.F	•	•	52 g	0,01 mg	1 mg	ø85 mm			

AS.3Y

PROFESSIONAL LEVEL



- Parts counting
- Filling
- Animal weighing
- Density determination
- Checkweighing
- Percentage
- Statistics
- Formulation
- Under-hook weighing
- GLP procedures
- Infrared sensors
- Comparative weighing
- Alibi memory



• Electronic level indicator
• Infrared proximity sensors

• Colorful touch-screen panel 5,7”

• Data exchange through USB storage devices

• Communicationinterfaces: Ethernet, USB (2 ports), RS232

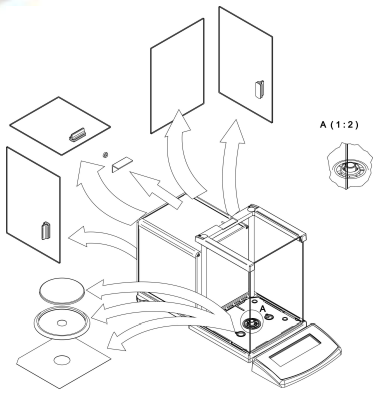
Dismountable glass doors for easy cleaning

Analytical balances of AS.3Y type have been designed on the basis of new electronic modules and the latest technology. Measurement reliability and accuracy is assured by internal calibration triggered by time flow or temperature conditions. Balances feature 5.7” colour touch screen panel with new software for the highest convenience of use!

Model		M	Max	d	e	Pan size			
AS 220.3Y	•	•	220 g	0,1 mg	1 mg	ø85 mm			
AS 310.3Y	•	•	310 g	0,1 mg	1 mg	ø85 mm			
AS 510.3Y	•		510 g	0,1 mg		ø85 mm			

internalcalibration

XA/2X



- Parts counting
- Filling
- Animal weighing
- Density determination
- Checkweighing
- Percentage
- Statistics
- Formulation
- Air buoyancy correction
- Under-hook weighing
- GLP procedures
- Pipette calibration

Dismountable glass doors for easy cleaning

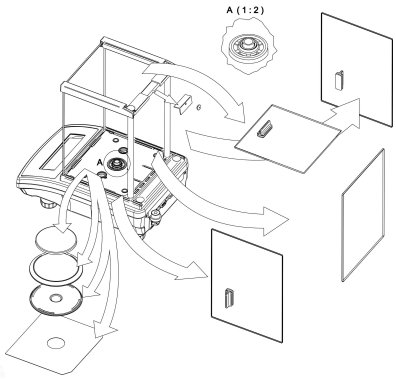
XA/2X balances are equipped with big backlit graphic display with extended menu, 12-keys membrane keyboard, big weighing chamber with sliding upper glass door and side glass door. Balance accuracy is guaranteed by automatic internal calibration triggered by time flow or temperature conditions.

Model		M	Max	d	e	Pan size			
XA 82/220/2X	•	•	82/220 g	0,01/0,1 mg	1 mg	ø85 mm			
XA 220/2X	•	•	220 g	0,1 mg	1 mg	ø100 mm			
XA 310/2X	•	•	310 g	0,1 mg	1 mg	ø100 mm			

• *internalcalibration*

Analytical balances

AS/X



Dismountable glass doors for easy cleaning

- Parts counting
- Filling
- Animal weighing
- Density determination
- Checkweighing
- Percentage
- Statistics
- Formulation
- Air buoyancy correction
- Under-hook weighing
- GLP procedures

** Function only available as an extra option of the software*

Balances series AS/X represent standard level of analytical balances. They are equipped with backlit graphic display. Accuracy and precise measurement of the balances are determined by automatic internal calibration, triggered by time flow or temperature conditions. User has access to big weighing chamber with sliding side glass doors and sliding top glass door. Each balance in standard version features a RS 232 output for connecting an additional display. Balances have the possibility of weighing loads outside the main weighing platform (so called under hook weighing). This means of mass measuring is an alternative for loads with non-standard dimensions and shapes and those which create magnetic field. Under hook weighing is also applied for density determination procedures.
USB slot is available in non approved models.

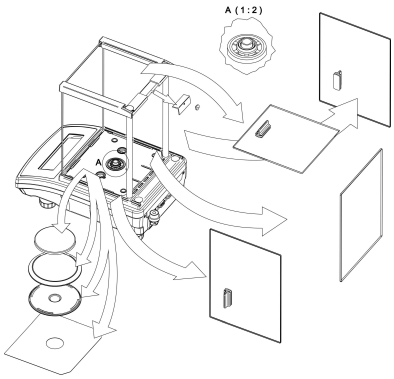
Model		M	Max	d	e	Pan size			
AS 220/X	•	•	220 g	0,1 mg	1 mg	ø85 mm			
AS 310/X	•	•	310 g	0,1 mg	1 mg	ø85 mm			

internalcalibration

Analytical balances

AS/C

Dismountable glass doors for easy cleaning



- Parts counting
- Density determination
- Checkweighing
- Percentage
- Under-hook weighing
- GLP procedures

Balances series AS represent standard level of analytical balances. They are equipped with backlit LCD display. Accuracy and precise measurement of the balances are determined by automatic internal calibration, triggered by time flow or temperature conditions. Analytical balances AS series are offered with following capacities:

- 110, 160, 220, 310 g with readability of 0,1 mg,
- 60/220 g with readability of 0,01/0,1 mg.

User has access to big weighing chamber with sliding side glass doors and sliding top glass door. Each balance in standard version features a RS 232 output for connecting an additional display.
Balances series AS/C/1 are also available with external calibration as a non approved version.

Model		M	Max	d	e	Pan size			
AS 60/220/C/2	•	•	60/220 g	0,01/0,1 mg	1 mg	ø70 mm			
AS 220/C/2	•	•	220 g	0,1 mg	1 mg	ø85 mm			
AS 310/C/2	•		310 g	0,1 mg		ø85 mm			
AS 110/C/1			110 g	0,1 mg		ø85 mm			
AS 160/C/1			160 g	0,1 mg		ø85 mm			
AS 220/C/1			220 g	0,1 mg		ø85 mm			

internalcalibration

Radwag Laboratory Holders for Analytical Balances

UL

Radwag Laboratory Holders have been designed for faster and more convenient weighing. They ensure perfect and secure fixing of small vessels, both typical and non-standard shapes.
Product highlights:
- Full ergonomics of weighing
- Direct dosing of a sample into a vessel
- High work efficiency, lower costs
(minimizing possible loss of samples resulting from moving)
- Direct dosing of samples into various samples
(test tubes, round flasks, flat flasks,
plastic test-tubes, titration vessels)
Laboratory holders are compatible with all analytical balances made by Radwag: XA.3Y, AS.3Y, XA/2X, AS/X, AS/C.

UL-01

UL-02

UL-03

UL-04

Model	Application			
UL-01	glass and plastic tubes, filters, various vessels			
UL-02	glass and plastic tubes ø8, ø10, ø12 mm			
UL-03	round bottom measuring flask 50ml, 100ml, 250 ml			
UL-04	flat bottom measuring flask 50ml, 100 ml			

Automatic feeder PA-02/H PA

Automatic feeder PA-02/H

Example of set (feeder PA-02/H ; balance AS220.3Y ; printer)

CONSTRUCTION

Automatic feeder PA-02 is a device designed for automatic filling objects with small dimensions, in particular pills and capsules, as well as small mechanical parts. The feeder, which is attached to a balance, provides even dosing of elements onto the weighing pan.
If joined with a RADWAG analytical balance series 3Y, it provides fast static control of samples according to strict pharmaceutical requirements.

DESIGN AND FUNCTIONALITY

The device is based on a cylindrical vibrating container equipped with a conical or stepped storage bin offered in stainless steel version. Due to application in pharmaceutical industry, the feeder's storage bin is continuously welded in its inner and outer part, and it is chemically electropolished. The feeder is appropriate for dosing pills from 3 to 15 mm in diameter, round and oblong, as well as details with similar shapes and dimensions.
The device is enclosed in a powder coated mild steel housing.
RADWAG laboratory balances series **3Y (AS.3Y and PS.3Y)**, which are cooperating with the automatic feeder, provide complete control over the PA-02/H feeder. The balance controls the start and stop of the feeder and adjusts object feeding frequency. The device also enables automatic feeding of objects according to pre-defined algorithm. Filled objects (e.g. pills) are weighed on a balance and statistically assessed. The feeder fills the following object as soon as it receives an adequate command from the balance.

Model	Technical data
PA-02/H	
Diameter of filled object	ø 3 ÷ 10 mm
Feeder diameter	ø 180 mm
Height of feeder's vibrating element	70 mm
Filling speed	1 ÷ 15 pcs/min
Operating temperature	+5 °C ÷ +40 °C
Power consumption	8 W
IP rating	IP 34
Power supply	110 ÷ 230VAC 50 / 60Hz
Control	External from balance level (AS.3Y ; PS.3Y)
Interface	RS 232
Net weight	16 kg
Dimension	320×320×300 mm

Precision balances PS.3Y

PROFESSIONAL LEVEL

- Parts counting
- Filling
- Animal weighing
- Density determination
- Checkweighing
- Percentage
- Statistics
- Formulation
- Under-hook weighing
- GLP procedures
- Infrared sensors
- Comparative weighing
- Alibi memory

• Electronic level indicator
• Infrared proximity sensors

• Colorful touch-screen panel 5,7”

• Data exchange through USB storage devices

• Communicationinterfaces: Ethernet, USB (2 ports), RS232

Precision balances of PS.3Y are the response for growing market demands concerning simple operation and maximum automatization of weighing process. Measurement reliability and accuracy is ensured by internal calibration triggered by time flow or temperature conditions. Balances feature 5.7” colour touch screen panel 3Y scales are provided with a new software ensuring great ease of use.

Model		M	Max	d	e	Pan size			
PS 200/2000.3Y	•	•	200/2000 g	1/10 mg	10/100 mg	128×128 mm			
PS 250.3Y	•	•	250 g	1 mg	10 mg	128×128 mm			
PS 450.3Y	•	•	450 g	1 mg	10 mg	128×128 mm			
PS 600.3Y	•	•	600 g	1 mg	10 mg	128×128 mm			
PS 750.3Y	•		750 g	1 mg		128×128 mm			
PS 1000.3Y	•		1000 g	1 mg		128×128 mm			
PS 1500.3Y	•	•	1500 g	10 mg	100 mg	195×195 mm			
PS 2500.3Y	•	•	2500 g	10 mg	100 mg	195×195 mm			
PS 4500.3Y	•	•	4500 g	10 mg	100 mg	195×195 mm			
PS 6000.3Y	•	•	6000 g	10 mg	100 mg	195×195 mm			
PS 8000.3Y.1			8000 g	10 mg		195×195 mm			

internal calibration

Precision balances

WLY

WLY/D

WLY/R

WLY/K

PROFESSIONAL LEVEL

- Parts counting
- Filling
- Animal weighing
- Density determination
- Checkweighing
- Percentage
- Statistics
- Formulation
- Under-hook weighing
- GLP procedures
- Infrared sensors

• Infrared proximity sensors

• Colorful touch-screen panel 5,7”

• Data exchange through USB storage devices

• Communicationinterfaces: Ethernet, USB (2 ports), RS232

Precision balances of WL/Y are the response for the growing market demands concerning simple operation and maximum automation of the weighing process. Balances feature 5.7” colour touch screen panel. Y scales feature new software ensuring great ease of use.

Model	M	Max	d	e	Pan size
WLY 1/D2		1 kg	0,01 g		195×195 mm
WLY 2/D2		2 kg	0,01 g		195×195 mm
WLY 6/D2	•	6 kg	0,1 g	1 g	195×195 mm
WLY 10/D2		10 kg	0,1 g		195×195 mm
WLY 20/D2		20 kg	0,1 g		195×195 mm
WLY 6/C1/R	•	6 kg	0,1 g	1 g	360×290 mm
WLY 6/C1/K	•	6 kg	0,1 g	1 g	360×290 mm
WLY 12/C1/R		12 kg	0,2 g		360×290 mm
WLY 12/C1/K		12 kg	0,2 g		360×290 mm
WLY 30/C1/R		30 kg	0,5 g		360×290 mm
WLY 30/C1/K		30 kg	0,5 g		360×290 mm
WLY 60/C2/R	•	60 kg	1 g	10 g	500×400 mm
WLY 60/C2/K	•	60 kg	1 g	10 g	500×400 mm
WLY 120/C2/R		120 kg	2 g		500×400 mm
WLY 120/C2/K		120 kg	2 g		500×400 mm
Extra charge for dual range version (WLY/C1; WLY/C2 non approved model only)					

externalcalibration

APP.3Y

PROFESSIONAL LEVEL

Additional pan for APP 10.3Y; APP 10.3Y.1

- Electronic level indicator
- Infrared proximity sensors

- Colorful touch-screen panel 5,7”

- Data exchange through USB storage devices

- Communicationinterfaces: Ethernet, USB (2 ports), RS232

- Parts counting
- Filling
- Animal weighing
- Density determination
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- Percentage
- Statistics
- Formulation
- Under-hook weighing
- GLP procedures
- Infrared sensors
- Comparative weighing
- Alibi memory

Precision balances of APP.3Y are the response for growing market demands concerning simple operation and maximum automatization of the weighing process. Measurement reliability and accuracy is assured by internal calibration triggered by time flow or temperature conditions. Balances feature 5.7” colour touch screen panel with new software for the highest convenience of use!

Model		M	Max	d	e	Pan size
APP 10.3Y	•	•	10 kg	0,01 g	0,1g	347×259 mm
APP 10.3Y.1			10 kg	0,01 g		347×259 mm
APP 25.3Y	•	•	25 kg	0,1 g	1 g	347×259 mm
APP 25.3Y.1			25 kg	0,1 g		347×259 mm
APP 35.3Y	•	•	35 kg	0,1 g	1 g	347×259 mm
APP 35.3Y.1			35 kg	0,1 g		347×259 mm
APP 50.3Y.1			50 kg	0,1 g		347×259 mm

internal calibration

- Parts counting
- Filling
- Animal weighing
- Density determination
- Checkweighing
- Percentage
- Statistics
- Formulation
- Under-hook weighing
- GLP procedures

Balances series PS/X are new type of precision balances with large graphic backlit display and extended user menu. The balances comprise all the features and functions of balances series X and also the newest electronic and mechanical solutions and upgraded software. The electronic and mechanical structure is similar to balances series PS. PS/X series is equipped with 12 key membrane keyboard, which ensures easyand more intuitive operation for the user. Pan dimension in this series is 195×195 mm or 128×128 mm with a draught shield over the weighing pan. All the balances series PS/X feature internal calibration system. Each balance is equipped with RS 232 and RS485 outputs, PS/2 socket and additional LCD display plug. GLP procedure is available in a form of a report from balance calibration. Shape of the printout is modifiable. User name, project name, print of date and time, and print frame are user defined on a printout. Balances are equipped with optional weighing of loads outside the weighing pan, so called under hook weighing. It is an alternative for weighing loads with non standard dimensions or made of magnetic substances. Under hook weighing is additionally applied in case of density determination procedure.

Model		M	Max	d	e	Pan size			
PS 200/2000/X	•	•	200/2000 g	0,001/0,01 g	0,01/0,1 g	128×128 mm			
PS 250/X	•	•	250 g	0,001 g	0,01 g	128×128mm			
PS 450/X	•	•	450 g	0,001 g	0,01 g	128×128 mm			
PS 750/X	•	•	750 g	0,001 g	0,01 g	128×128 mm			
PS 1000/X	•		1000 g	0,001 g		128×128 mm			
PS 1500/X	•	•	1500 g	0,01 g	0,1 g	195×195 mm			
PS 2500/X	•	•	2500 g	0,01 g	0,1 g	195×195 mm			
PS 4500/X	•	•	4500 g	0,01 g	0,1 g	195×195 mm			
PS 6000/X	•	•	6000 g	0,01 g	0,1 g	195×195 mm			
PS 8000/X			8000 g	0,01 g		195×195 mm			

internalcalibration

- Parts counting
- Density determination
- Checkweighing
- Percentage
- Under-hook weighing
- GLP procedures

Balances series PS are equipped with 12 key front panel and LCD backlit display. Pan dimension is this series is 195×195 mm or 128×128 mm with a glass shield over the weighing pan which protects the load against possible breeze. Each balance has RS 232 and additional display outputs as standard. GLP procedure is available in a non-modifiable form of a report from balance calibration. Balances marked as C/1 are equipped with system of external calibration. Balances are equipped with optional weighing of loads outside the weighing pan, so called under hook weighing. it is an alternative for weighing loads with non standard dimensions or made of magnetic substances. Under hook weighing is additionally applied in case of density determination procedure.

Model		M	Max	d	e	Pan size			
PS 200/2000/C/1		•	200/2000 g	0,001/0,01 g	0,01/0,1 g	128×128 mm			
PS 210/C/1		•	210 g	0,001 g	0,01 g	128×128 mm			
PS 360/C/1			360 g	0,001 g		128×128 mm			
PS 510/C/1			510 g	0,001 g		128×128 mm			
PS 750/C/1			750 g	0,001 g		128×128 mm			
PS 1000/C/1			1000 g	0,001 g		128×128 mm			
PS 1200/C/1		•	1200 g	0,01 g	0,1 g	195×195 mm			
PS 2100/C/1		•	2100 g	0,01 g	0,1 g	195×195 mm			
PS 3500/C/1			3500 g	0,01 g		195×195 mm			
PS 4500/C/1			4500 g	0,01 g		195×195 mm			
PS 6000/C/1			6000 g	0,01 g		195×195 mm			
PS 8000/C/1			8000 g	0,01 g		195×195 mm			

internalcalibration

- Parts counting
- Density determination
- Checkweighing
- Percentage
- Under-hook weighing
- GLP procedures

Balances series PS are equipped with 12 key front panel and LCD backlit display. Pan dimension is this series is 195×195 mm or 128×128 mm with a glass shield over the weighing pan which protects the load against possible breeze. Each balance has RS 232 and additional display outputs as standard. GLP procedure is available in a non-modifiable form of a report from balance calibration. Balances marked as C/2 are equipped with system of internal calibrationtriggered by time flow or temperature conditions. Balances are equipped with optional weighing of loads outside the weighing pan, so called under hook weighing. it is an alternative for weighing loads with non standard dimensions or made of magnetic substances. Under hook weighing is additionally applied in case of density determination procedure.

Model		M	Max	d	e	Pan size			
PS 200/2000/C/2	•	•	200/2000 g	0,001/0,01 g	0,01/0,1 g	128×128 mm			
PS 210/C/2	•	•	210 g	0,001 g	0,01 g	128×128 mm			
PS 360/C/2	•	•	360 g	0,001 g	0,01 g	128×128 mm			
PS 600/C/2	•	•	600 g	0,001 g	0,01 g	128×128 mm			
PS 750/C/2	•		750 g	0,001 g		128×128 mm			
PS 1000/C/2	•		1000 g	0,001 g		128×128 mm			
PS 1200/C/2	•	•	1200 g	0,01 g	0,1 g	195×195 mm			
PS 2100/C/2	•	•	2100 g	0,01 g	0,1 g	195×195 mm			
PS 3500/C/2	•	•	3500 g	0,01 g	0,1 g	195×195 mm			
PS 4500/C/2	•	•	4500 g	0,01 g	0,1 g	195×195 mm			
PS 6000/C/2	•	•	6000 g	0,01 g	0,1 g	195×195 mm			

internalcalibration

Precision balances APP/2C

- Parts counting
- Density determination
- Checkweighing
- Percentage
- Under-hook weighing

Additional pan for APP 10/2C; APP 10/2C/1

Precision balances series APP/C are offered with weighing platform dimensions 365×258 mm. Balances are equipped with backlit LCD display. Each series of APP balance is offered with following capacities: 25, 30, 35 and 6/35 kg. Independently on version, APP balance is based on electromagnetic measuring system, external calibration (C/2 - internal calibration) and RS 232 output. Balance casing is made of aluminium, weighing pan is in stainless steel technology. Balances series APP have under hook weighing as standard solution. It is an alternative solution for weighing loads with non-standard dimensions and those creating magnetic field. Under hook weighing is also applied for density determination procedure.

Model		M	Max	d	e	Pan size			
APP 10/2C	•		10 kg	0,01 g		347×259 mm			
APP 10/2C/1			10 kg	0,01 g		347×259 mm			
APP 25/2C	•	•	25 kg	0,1 g	1 g	347×259 mm			
APP 25/2C/1			25 kg	0,1 g		347×259 mm			
APP 35/2C	•		35 kg	0,1 g		347×259 mm			
APP 35/2C/1			35 kg	0,1 g		347×259 mm			
APP 6/35/2C	•	•	6/35 kg	1/5 g	1/5 g	347×259 mm			
APP 50/2C/1			50 kg	0,1 g		347×259 mm			

internalcalibration

Precision balances

WLC

WLC /B1

No cooperation with external displays

WLC /A2

BASIC LEVEL

WLC /R

WLC /K

- Parts counting
- Internal accumulator
- Checkweighing
- Percentage
- Under-hook weighing
- Peak hold

For models WLC/B1 under-hook weighing is no available.

Model	M	Max	d	e	Pan size			
WLC 0,6/B1	•	0,6 kg	0,01 g	0,1 g	125×145 mm			
WLC 0,6/A1	•	0,6 kg	0,01 g	0,1 g	128x128 mm			
WLC 1/A2		1kg	0,01 g		195×195 mm			
WLC 2/A2		2 kg	0,01 g		195×195 mm			
WLC 6/A2	•	6 kg	0,1 g	1 g	195×195 mm			
WLC 10/A2		10 kg	0,1 g		195×195 mm			
WLC 20/A2		20 kg	0,1 g		195×195 mm			
WLC 6/C1/R	•	6 kg	0,1g	1 g	290×360 mm			
WLC 6/C1/K	•	6 kg	0,1g	1 g	290×360 mm			
WLC 12/C1/R		12 kg	0,2g		290×360 mm			
WLC 12/C1/K		12 kg	0,2g		290×360 mm			
WLC 30/C1/R		30 kg	0,5g		290×360 mm			
WLC 30/C1/K		30 kg	0,5g		290×360 mm			
WLC 60/C2/R	•	60 kg	1g	10 g	400×500 mm			
WLC 60/C2/K	•	60 kg	1g	10 g	400×500 mm			
WLC 120/C2/R		120 kg	2 g		400×500 mm			
WLC 120/C2/K		120 kg	2 g		400×500 mm			
Extra charge for dual range version (WLC/C1; WLC/C2 non approved model only)								
Extra charge for add display port (only for C1 and C2 models)								

externalcalibration

WLC C/2

BASIC LEVEL

- Parts counting
- Density determination
- Checkweighing
- Percentage
- Under-hook weighing
- GLP procedures
- Peak hold
- Internal acculumator

Internal rechargeable accumulator as standard in balances series WLC C/2

Balances series WLC C/2 are designed for fast and precise determination of mass in laboratory and industrial conditions. They can also be used in areas with no access to mains (230V), as their standard equipment includes internal rechargeable battery and RS 232 output. All models of WLC C/2 balance (pan size: 128×128 and 195×195) are equipped with stainless steel weighing platform and backlit LCD display providing good reading of weighing result. Balances series WLC C/2 feature the function of automatic internal calibration. Series A1 and A2 additionally have the option of weighing loads outside weighing platform (so called under hook weighing), where the load is hanged under the instrument. This is an alternative for weighing loads with non-standard dimensions and shapes. This method of weighing is also useful for determination of density of solids and liquids with application of standard functions of the balance. Internal rechargeablecell as standard in balances series WLC C/2.

Model		M	Max	d	e	Pan size			
WLC 0,6/A1/C/2	•	•	0,6 kg	0,01 g	0,1 g	128×128 mm			
WLC 1/A2/C/2	•		1 kg	0,01 g		195×195 mm			
WLC 1,2/A2/C/2	•		1,2 kg	0,02 g		195×195 mm			
WLC 3/A2/C/2	•		3 kg	0,05 g		195×195 mm			
WLC 6/A2/C/2	•	•	6 kg	0,1 g	1 g	195×195 mm			

internalcalibration

- Parts counting
- Internal accumulator
- Checkweighing
- Percentage
- Summing
- Peak hold

WTB balances are designed for fast and precise determination of mass in laboratory conditions. They can be used in locations where no power (230V) is accessible as they are equipped with internal rechargeable battery(6×AA NiMH). Balances are equipped with stainless steel weighing pan, RS 232 output and backlit LCD display.

Model	M	Max	d	e	Pan size			
WTB 200		200 g	0,001 g		ø 115 mm			
WTB 2000		2000 g	0,01 g		125×145 mm			

external calibration

Carat balances

AS/CT

AS/CT

PS/CT

Parts counting

Density determination

Percentage

Summing

Carat balances series AS/CT feature a backlit LCD display. Balance accuracy is guaranteed by system of automatic internal adjustment/calibration system, triggered by time flow and temperature changes. Balances series AS/CT are equipped with pan size ø 85 mm, glass draft shield with sliding top and side doors and readability 0,2 mg. The glass draft shield improves operation conditions, especially in areas with possible breeze.
Carat balances series PS/CT feature backlit LCD display, weighing pan 128×128 mm with glass draft shield and readability 1 mg. They are also accessible with 10 mg readability, and weighing pan 195×195 mm.

Model		M	Max	d	e	Pan size			
PS 510/C/1/CT			510 g / 2550 ct	0,001g / 0,005ct		128×128 mm			
PS 510/C/2/CT	•	•	510 g / 2550 ct	0,001g / 0,005ct	0,01g / 0,05ct	128×128 mm			
PS 2100/C/1/CT			2100 g / 10500 ct	0,01g / 0,05ct		195×195 mm			
PS 2100/C/2/CT	•	•	2100 g / 10500 ct	0,01g / 0,05ct	0,1g / 0,5ct	195×195 mm			
AS 120/C/2/CT	•	•	120 g / 600 ct	0,0002g / 0,001ct	0,002g / 0,01ct	ø 85 mm			
AS 220/C/2/CT	•	•	220 g / 1100 ct	0,0002g / 0,001ct	0,002g / 0,01ct	ø 85 mm			
AS 320/C/2/CT	•		320 g / 1600 ct	0,0002g / 0,001ct		ø 85 mm			

internalcalibration

Metal purity tester

WTB/AU

- Density determination
- Percentage
- Parts counting
- Summing

The balance display functionality WTB 600/AU:

Laboratory balances series WTB/AU and PS/X/AU featuring special design of the container and dedicated software, allow for density determination of metals.
Application of the method for density determination provides the following options:

- Determination of carat value of gold,
- Densitydetermination of platinium,
- Density determination of other metals.

The software has the option of distinguishing precious metals from counterfeited by density determination of a sample.

Model		M	Max	d	e	Pan size			
WTB 600/AU			600 g	0,01 g		125x145 mm			
PS 1500/X/AU	•	•	1 500 g	0,01 g	0,1 g	195×195 mm			

Balances for cereals density

PS/X/G

- Parts counting
- Filling
- Animal weighing
- Density determination
- Checkweighing
- Percentage
- Statistics
- Formulation
- Under-hook weighing

PS/X/G balance is designed for density determination of cereals. It is equipped with system of automatic internal calibration, pan size 195×195 mm and big backlit graphic display with extended user menu. The density determination of cereals in loose state is carried out with application of precision balance series PS/X 4500/G and cereals density determination kit of 1l volume. The density is calculated automatically by balance's software (in accordance with tables oncereals density). Density determination kit is compatible with grains of: wheat, oats, barley, rye. Balance, as a precise measuring instrument, is equipped with control procedures complying with ISO/GLP, high capacity memory (tables oncereals density), and possibility of cooperation with a printer or a computer. Balances in standard feature RS 232 slot, PS/2 output and possibility of connecting an additional display. Quality of balances series PS/X has been confirmed by European certificate EC Type Approval. Balances are equipped with possibility of weighing loads outside the main weighing platform (so called under hook weighing). This means of mass measuring is an alternative for loads with non-standard dimensions and shapes and those which create magnetic field. Under hook weighing is also applied for density determination procedures.

Model		M	Max	d	e	Pan size			
PS/X 4500/G	•	•	4500 g	0,01 g	0,1 g	195×195 mm			
Cereals density determination kit									

internalcalibration

Scales for control of packaged goods
(II class approved)

PS.3Y.KTP

- Counting pieces
- Checkweighing
- Percentage
- Summing
- Under-hook weighing

Scales series PS.3Y.KTP are equipped with implemented module for realization of prepacked goods control process. The process is designed on data bases with list of assortments and operators. A control process that is initiated from scale level is completed automatically on check of pre-defined quantity of packages (samples). The quantity of packages is determined by scale software and it depends on batch quantity of a good. Scales are equipped with graphic display (5,7” touch screen) which indicates data on currently performed action (control) and its result.
PS.3Y.KTP balance can operate in a network multi-stand workstation – PC software KTP-NET.
Scales are working with: barcode scanner; label printers; RFID readers; flash memory USB.

Model	M	Max	d = e	Pan size			
PS 750.3Y.KTP	•	750 g	0,01 g	128×128 mm			
PS 1500.3Y.KTP	•	1500 g	0,1 g	195×195 mm			
PS 2500.3Y.KTP	•	2500 g	0,1 g	195×195 mm			
PS 4500.3Y.KTP	•	4500 g	0,1 g	195×195 mm			

Scales for control of packaged goods – dual range
(PUE 7 terminal; II class approved; 2x6.000e)

WLY/KTP

WLY/KTP/D WLY/KTP/R WLY/KTP/K

• Infrared proximity sensors

• Colorful touch-screen panel 5,7”

• Data exchange through USB storage devices

• Communicationinterfaces: Ethernet, USB (2 ports), RS232

Single or multi-station version!

- Counting pieces
- Filling
- Animal weighing
- Density determination
- Checkweighing
- Percentage
- Statistics
- Formulation
- Under-hook weighing
- GLP procedures
- Infrared sensors

Counting scales of WL/Y are the response for growing market demands for simple operation and maximum automation of weighing process. Scales feature 5.7” colour touch screen panel. The new software ensures unrivalled convenience of use.
Scales are working with: barcode scanner; label printers; RFID readers; PC equipment (keyboard; mouse; flash memory USB).

Model	M	Max	d = e	Pan size
WLY 0,6/1,2 /KTP/D2	•	0,6/1,2 kg	0,1/0,2 g	195×195 mm
WLY 1,2/3 /KTP /D2	•	1,2/3 kg	0,2/0,5 g	195×195 mm
WLY 3/6 /KTP /D2	•	3/6 kg	0,5/1 g	195×195 mm
WLY 6/12 /KTPD2	•	6/12 kg	1/2 g	195×195 mm
WLY 6/12 /KTP /C1/R	•	6/12 kg	1/2 g	360×290 mm
WLY 6/12 /KTP /C1/K	•	6/12 kg	1/2 g	360×290 mm
WLY 12/30 /KTP /C1/R	•	12/30 kg	2/5 g	360×290 mm
WLY 12/30 /KTP /C1/K	•	12/30 kg	2/5 g	360×290 mm
WLY 60/120 /KTP /C2/R	•	60/120 kg	10/20 g	500×400 mm
WLY 60/120 /KTP /C2/K	•	60/120 kg	10/20 g	500×400 mm

Scales for control of packaged goods
(PUE 7 terminal; III class approved; 2x3.000e)

WPY/KTP

WPY/KTP/D WPY/KTP/R WPY/KTP/K

• Infrared proximity sensors

• Colorful touch-screen panel 5,7”

• Data exchange through USB storage devices

• Communicationinterfaces: Ethernet, USB (2 ports), RS232

Single or multi-station version!

- Counting pieces
- Filling
- Animal weighing
- Density determination
- Checkweighing
- Percentage
- Statistics
- Formulation
- Under-hook weighing
- GLP procedures
- Infrared sensors

Scales series WPY/KTP are equipped with implemented module for realization of prepacked goods control process. The process is designed on data bases with list of assortments and operators. A control process that is initiated from scale level is completed automatically on check of pre-defined quantity of packages (samples). The quantity of packages is determined by scale software and it depends on batch quantity of a good. Scales are equipped with graphic display (5,7” touch screen) which indicates data on currently performed action (control) and its result.
WPY/KTP balance can operate in a network multi-stand workstation – PC software KTP-NET.
Scales are working with: barcode scanner; label printers; RFID readers; flash memory USB.

Model	M	Max	d = e	Pan size
WPY 0,6/1,5/KTP/D2	•	0,6/1,5 kg	0,2/0,5 g	195×195 mm
WPY 1,5/3/KTP/D2	•	1,5/3 kg	0,5/1 g	195×195 mm
WPY 3/6/KTP/D2	•	3/6 kg	1/2 g	195×195 mm
WPY 3/6/KTP/C1/R	•	3/6 kg	1/2 g	360×290 mm
WPY 3/6/KTP/C1/K	•	3/6 kg	1/2 g	360×290 mm
WPY 6/15/KTP/C1/R	•	6/15 kg	2/5 g	360×290 mm
WPY 6/15/KTP/C1/K	•	6/15 kg	2/5 g	360×290 mm
WPY 15/30/KTP/C1/R	•	15/30 kg	5/10 g	360×290 mm
WPY 15/30/KTP/C1/K	•	15/30 kg	5/10 g	360×290 mm
WPY 30/60/KTP/C1/R	•	30/60 kg	10/20 g	360×290 mm
WPY 30/60/KTP/C1/K	•	30/60 kg	10/20 g	360×290 mm
WPY 15/30/KTP/C2/R	•	15/30 kg	5/10 g	400x500 mm
WPY 15/30/KTP/C2/K	•	15/30 kg	5/10 g	400x500 mm

Scales for control of packaged goods
(HY terminal; stainless steel; III class approved; 2x3.000e)

HTY/KTP

- Counting pieces
- Filling
- Animal weighing
- Density determination
- Checkweighing
- Percentage
- Statistics
- Formulation
- Under-hook weighing
- GLP procedures
- Infrared sensors

Single or multi-station version!

Scales series HTY/KTP for Prepacked Goods Control in single stand version

Scales series Y/KTP have implemented module for Prepacked Goods Control designed with application of a database of assortments and operators. Control started by scale is automatically stopped after suitable packages (samples) number has been controlled. Number of the packages is fixed by scale program depending on product lot size. Scales are also equipped with graphic display (5,7" touch panel), on which information concerning currently performed control and its result are presented .

Control cycle proceeds as follows :

- operator choice,
- product choice,
- control start,
- weighingsloading,
- automatic control end on weighing pre-defined number of packages,
- control report print .

Each carried out control is ended with final report containing all data required by a prepacked goods control process. The report is automatically saved in scale memory and at the same time it can be printed by printer connected to scale .

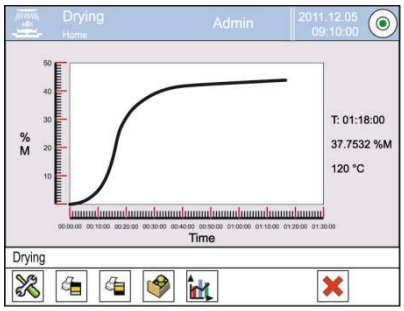
Software of HTY/KTP scales for PGC in single stand version is supported by computer application "Viewer KTP". It is used to monitor and/or print reports from processed prepacked goods controls and reports from processed controls of packages tares.

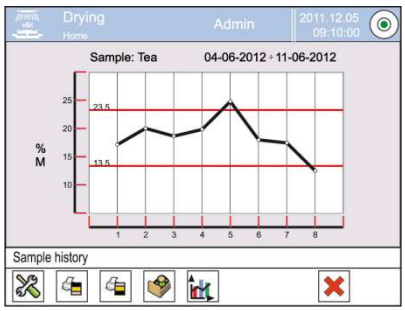
Model	M	Max	d = e	Pan size
HTY 1,5/3 /KTP/H1	•	1,5/3 kg	0,5/1 g	150x200 mm
HTY 3/6 /KTP/H1	•	3/6 kg	1/2 g	150x200 mm
HTY3/6 /KTP/H2	•	3/6 kg	1/2 g	250x300 mm
HTY6/15 /KTP/H2	•	6/15 kg	2/5 g	250x300mm
HTY6/15 /KTP/H3	•	6/15 kg	2/5 g	360×290 mm
HTY15/30 /KTP/H3	•	15/30 kg	5/10 g	360×290 mm
HTY30/60/KTP/H3	•	30/60 kg	10/20 g	360×290 mm

Moisture analyzers

MA.3Y

- Moisture determination
- Dry mass determination
- Dryingprofiles
- Finish modes
- Visualization of drying process
- Halogen or infrared lamps
- GLP procedures
- Permeability of water vapour
- Higher level of temperature





Moisture analyzer is a laboratory measuring instrument intended to determine relative moisture content in samples of different substances. MA 3Y features 5,7" LCD colour touch panel which provides new possibilities of instrument's operation and presenting measurement results. It features extended databases containing programmable drying modes related to the database of samples. MA 3Y series enables printing and exporting charts presented on its display to a BMP file.

Highlights of moisture analyzer MA 3Y series:
- accuracy of moisture content readout 0,0001%,
- heating components: IR as standard (160°C); option is halogen (250°C),
- graphic presentation of drying result, charts: Δm, %M, %D, %R,
- drying profiles: standard, mild, step, quick,
- finish mode: AUTO 1 – 5, manual, automatic, time defined,
- database of drying procedures: ~10.000 records for each data type,
- database of samples,
- interfaces: 2 x USB 2.0; 4IN / 4OUT; RS 232; Ethernet 10/100Mbit.

Personalization of instrument's settings is carried out in extended user profiles. Level control is based on LevelSENSING system, RADWAG patented solution, which uses a system of an electronic level. Standard and user defined printouts allow for maintaining documentation complying with GLP/GMP requirements practically in any application.

Maximal drying temperature is 160°C (an extra cost option is a moisture analyzer with temperature upgraded to 250°C - **200EUR**).

Model	HAL	IR	160°	250°	Max	d	Pan size	Accuracy of moistureread out			
MA 60.3Y		•	•		60 g	0,1 mg	ø 90 mm	0,0001 %			
MA 200.3Y		•	•		200 g	1 mg	ø 90 mm	0,001 %			

Moisture analyzers

MAC

STANDARD LEVEL

- %M — Moisture determination
- %D — Dry mass determination
- Dryingprofiles
- END — Finish modes
- Halogen or infrared lamps
- GLP — GLP procedures
- Permeability of water vapour
- 250°C — Higher level of temperature

CE

Moisture analyzers are measuring devices designed speciallyfor determination of moisture content in relatively small samples of various substances. Moisture analyzer MAC features:

·easy access provided by backlit LCD display,
·drying profile (standard, mild, step, rapid),
·finish mode (manual, humidity stabilization, automatic, time defined),
·GLP/GMP printouts and reports,
·halogen or infrared lamps,
·standard and non-standard applications,
·optimization of work due to halogen lamps mode.

Maximal capacity of moisture analyzer series MAX ranges from 50 g /1 mg to 210 g/1 mg. Moisture content is measured with accuracy 0,01% (0,001% for samples up to 1,5g). Maximal drying temperature is 160°C (an extra cost option is a moisture analyzerwith temperature upgraded to 250°C - **200EUR**).

Each moisture analyzer is equipped with aluminium weighing pan with dimensions ø 90mm.

A moisture analyzer and a specially designed kit enable determining water vapour permeability through samples of different substance.

Model	HAL	IR	160°	250°	Max	d	Pan size	Accuracy of moistureread out			
MAC 50/NH	•		•		50 g	1 mg	ø 90 mm	0,01/0,001 %			
MAC 50/NP		•	•		50 g	1 mg	ø 90 mm	0,01/0,001 %			
MAC 110/NH	•		•		110 g	1 mg	ø 90 mm	0,01 %			
MAC 110/NP		•	•		110 g	1 mg	ø 90 mm	0,01 %			
MAC 50/1/NH	•		•		50 g	0,1 mg	ø 90 mm	0,01/0,001 %			
MAC 50/1/NP		•	•		50 g	0,1 mg	ø 90 mm	0,01/0,001 %			
MAC 50/WH	•			•	50 g	1 mg	ø 90 mm	0,01/0,001 %			
MAC 210/NH	•		•		210 g	1 mg	ø 90 mm	0,01 %			
MAC 210/NP		•	•		210 g	1 mg	ø 90 mm	0,01 %			
MAC 50/1/WH	•			•	50 g	0,1 mg	ø 90 mm	0,01/0,001 %			
MAC 110/WH	•			•	110 g	1 mg	ø 90 mm	0,01 %			
MAC 210/WH	•			•	210 g	1 mg	ø 90 mm	0,01 %			

HAL *halogenlamps* IR *IR emitters* 160° *max. temp 160 °C* 250° *max. temp 250°*

MAC/NS

STANDARD LEVEL

- Moisture determination
- Dry mass determination
- Dryingprofiles
- Finish modes
- Halogen or infrared lamps
- GLP procedures
- Permeability of water vapour

Moisture analyzers are measuring devices designed especially for determination of moisture content in relatively small samples of various substances. This special version called MAC 50/NS is designed to meet the requirements of HACCP (ang. Hazard Analysis and CriticalControl Points) which is a systematic preventive approach to food safety and pharmaceutical safety that addresses physical, chemical, and biological hazards as a means of prevention ratherthan finished product inspection.
Both internal and external parts are produced without use of glass, heating element is a metal heater instead of halogen lamp.

Moisture analyzer MAC features:

• easy operation provided by backlit LCD display,
• drying profiles (standard, mild, step, rapid),
• finish mode (manual, humidity stabilization, automatic, time defined),
• GLP/GMP printouts and report,
• metal heater as source of heat, power 400 W,
• standard and non-standard applications,
• optimization of work due to heater modes.

Maximal capacity of moisture analyzer MAC/NG ranges from 50 g /0,1 mg to 210 g/1 mg. Moisture content is measured with accuracy 0,001% (0,0001% for MAC 50/1). Maximal drying temperature equals 160°C. Each moisture analyzer is equipped with aluminium weighing pan with dimensions ø 90mm. A moisture analyzer with a specially designed kit enables determining water vapor permeability through samples of different substances.

Model	Max	d	Pan size	Accuracy of moisturereadout
MAC 50/NS	50 g	1 mg	Ø 90mm	0,01/0,001 %
MAC 110/NS	110 g	1 mg	Ø 90 mm	0,01 %
MAC 50/1/ NS	50 g	0,1 mg	Ø 90 mm	0,01/0,001 %
MAC 210/NS	210 g	1 mg	Ø 90 mm	0,01 %

PROFESSIONAL LEVEL

E2R MOISTURE ANALYZERS

- Moisture determination
- Dry mass determination
- Drying profiles
- Finish modes
- Visualization of drying process
- Halogen or infrared lamps
- GLP procedures
- Permeability of water vapour
- Higher level of temperature

Moisture analyzers are measuring devices specially designed for determination of moisture content in relatively small samples of various substances. Moisture analyzer MAX is equipped with backlit graphic display, which makes the instrument's interface transparent and easy to use. User menu includes data base with 99 drying procedures, where each entry has its programmed name (for instance material name, its number, ID, etc). Moisture analyzer MAX features:

- ·easy access provided by backlit graphic display,
- ·standard and non-standard applications,
- ·available software languageversions: Polish, English, German, French, Spanish, Russian, Czech,
- ·menu operation with peripheral PC keyboard,
- ·data base with 99 drying procedures,
- ·drying profile (standard, mild, step, rapid),
- ·finish mode (manual, automatic, time defined),
- ·visualization of drying process,
- ·GLP/GMP printouts and report,
- ·halogen or infrared lamps.

Maximal capacity of moisture analyzer series MAX is 50 g /0,1 mg (60 g/1 mg).
Moisture content is measured with accuracy 0,01% / 0,001%. Maximal drying temperature is 160°C (optionally, the moisture analyzer is available with max. temperature upgraded to 250°C). Each moisture analyzer is equipped with aluminium weighing pan with dimensions ø 90mm. A moisture analyzer and a specially designed kit enable determining water vapour permeability through samples of different substance.

Model	HAL	IR	160°	250°	Max	d	Pan size	Accuracy of moisturereadout			
MAX 50/NH	•		•		50 g	1 mg	ø 90 mm	0,01/0,001 %			
MAX 50/NP		•	•		50 g	1 mg	ø 90 mm	0,01/0,001 %			
MAX 60/NH	•		•		60 g	1 mg	ø 90 mm	0,01/0,001 %			
MAX 60/NP		•	•		60 g	1 mg	ø 90 mm	0,01/0,001 %			
MAX 50/1/NH	•		•		50 g	0,1 mg	ø 90 mm	0,01/0,001 %			
MAX 50/1/NP		•	•		50 g	0,1 mg	ø 90 mm	0,01/0,001 %			
MAX 50/WH	•			•	50 g	1 mg	ø 90 mm	0,01/0,001 %			
MAX 60/WH	•			•	60 g	1 mg	ø 90 mm	0,01/0,001 %			
MAX 50/1/WH	•			•	50 g	0,1 mg	ø 90 mm	0,01/0,001 %			

HAL *halogenlamps* IR *IR emitters* 160° *max. temp 160 °C* 250° *max. temp 250°*

Additional equipment for laboratory balances

ANTI-DRAFT SHIELD

Anti-draft shield is intended for microbalances MYA series. It is an optional equipment of microbalances working in unfavourable conditions (air-drafts and breezes).

Compatible with:
MYA series

Model			
ANTI-DRAFT SHIELD (for microbalances MYA)			

ANTI-VIBRATION TABLE

Anti-vibration table is designed to provide stable working conditions required for high precision weighing. The structure of the table ensures isolation from vibrations occuring during regular operation of a balance.Efficient table functioning is ensured by separating construction of the MDF laquered table from the actual antivibration part featuring a stone plate, which feaures threaded feet alowing height adjustment.

Size of the table (L×W×H): 770×700×800 mm
Size of the stone plate(L×W×H): 500×270×115 mm

Compatible with:
MYA series;
XA; AS series;
PS; WLC; WTB; MAC; MAX series

Model			
ANTI-VIBRATION TABLE – Model SAL/M(mild steel construction)			
ANTI-VIBRATION TABLE – Model SAL/N(stainless steel construction)			

PROFESSIONAL WEIGHING TABLE

The professional weighing table is made of two elements: a table with lockers, and an anti-vibration table with stone top.
The desk is made of MDF plate. It is equipped with two lockers and a sliding shelf for computer, mouse and keyboard installation. There is also place for uninterruptible power supply UPS or power strip. In the rear of the countertop there is a platform for placing a LCD display.

The anti-vibration table is made of mild steel. The stone top is a granite plate with dimensions 410×270×115 mm.
Total dimensions of the professional weighing table with platform for LCD display are 1100×750×1070 mm.

Compatible with:
MYA series;
XA; AS series;
PS; WLC; WTB; MAC; MAX series

Model			
PROFESSIONAL WEIGHING TABLE(mild steel construction)			

Additional equipment for laboratory balances

LCD ADDITIONAL DISPLAY

Additional LCD display in plastic housing and a stand for placing on a table.

Model WD-3/01/Y compatible with:
3Y series;
Model WD-3/01 compatible with:
XA; AS/X; AS/C; PS/X; PS/C; APP/C series;
Model WD-4/01 compatible with:
WLC; WTB; PUE/C31

Model
LCD ADDITIONAL DISPLAY(in plastic housing)

ANTI DRAFT CHAMBER

The shield is designed for balance with weighing pan 128×128 mm. It is an optional equipment for balances operating in unfavourable conditions (breeze, wind). It is installed in place of standard pan protection. It is equipped with top and side sliding doors (free access to weighing pan).

Compatible with:
PS/X; PS/C (pan size 128x128mm).

Model
ANTI DRAFT CHAMBER

ANTISTATIC IONIZER

Antistatic ionizer is used to remove overflow of plus ions mainly, minus ions from the load as well and elements of balance and environment. Electric charges of air are neutralized what give quasi-balance of plus and minus ions.
Unbalance of plus and minus ions in the air can cause unwanted electric influences (attraction or repulsion) of elements which are in small distances to each other. It is usual for non-conducting materials (plastic, glass). Some of the elements of balance are made of plastic and glass. This problem can affect the balances. Usually this problem appears as multiply repeatability error or as multiply error of indications.

Model DJ-03 compatible with: MYA series
Model DJ-02 compatible with: XA; AS series.

Model
ANTISTATIC IONIZER - Models: DJ-03 / DJ-02

Additional equipment for laboratory balances

DENSITY DETERMINATION KIT

Designed for analytical and laboratory balances featuring weighing pan: ø85 and ø100 (KIT 85) or 128×128 mm (KIT 128). Manufactured in stainless steel.

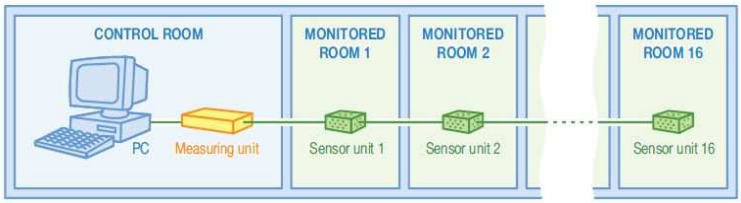
Applicable for determining density of:
- solids (by measuring small samples placed on pans);
- liquids (with application of glass plunger with determined volume).

Model KIT85 compatible with: XA; AS series.
Model KIT128 compatible with: PS series.

Model			
DENSITY DETERMINATION KIT - Models: KIT85 / KIT128			

AMBIENT CONDITION MODULE – MODEL THB

The system supports, up to 16modular sensors, whichallowsfor monitoring of ambientconditions in multiplepoints,within one or many rooms.
The system supports, up to 16modular sensors, whichallowsfor monitoring of ambientconditions in multiplepoints,within one or many rooms. THB module is accessible for purchasing with the calibration certificate.



Model			
AMBIENT CONDITION MODULE – Model THB: PC software & 1sensor in standard			

AMBIENT CONDITION MODULE – MODEL THB 2

THB2 module is a measuring instrument cooperating with the newest line of RADWAG automatic and manual mass comparators, and RADWAG laboratory balances series 3Y.
The ambient conditions indications are recalled by pressing a corresponding icon on balance's touch panel. The instrument user can preview ambient conditions using a touch panel of RADWAG weighing instrument.
Based on sent measuring data, the software of balances series 3Y additionally determines air density, which value is also previewed on instrument's touch panel.The ambient conditions module is plugged to the mass comparator or 3Y series balance through RS 232 slot. It is easily detachable for calibration and adjustment purposes in user defined time intervals.THB2 module is accessible for purchasing with the calibration certificate.

Compatible with: 3Y series.

Model			
AMBIENT CONDITION MODULE – Model THB2: direct connection with 3Y series; 1sensor			

Additional equipment for laboratory balances

Foot Button (for activate functions)

The foot button is designed for executing commands. It is a reliable tool aiding work of those operators who often utilize tarring / printing function.
The length of cable connecting the buttons to a weighing instrument is 1,5 m.

Compatible with:
3Y series: (multiplecommands).
XA/2X; AS/X; PS/X series: (TARE or PRINT commands).

Model			
Foot Button (for activate functions)			

PC KEYBOARD Model Ultra Slim

PC keyboard in Ultra Slim version (approx. 1/2 size of standard PC keyboards) with PS/2 or USB ports (3Y series balances). Facilitates fast and comfortable navigation through a balance menus.

Compatible with:
3Y series

Model			
PC Keyboard – model Ultra Slim			

ADAPTER FOR PIPETTES CALIBRATION

Additional adapter for pipettes calibration is designed for gravimetric calibration and/or checking of piston pipettes.
The content of the adapter:
- base element;
- special weighing pan;
- measuring vessel;
- "evaporation curtain" vessel;
- glass cover with dosing hole.

Compatible with:
MYA 21.3Y microbalance model;
XA.3Y; AS.3Y; XA/2X; AS/X series

Model			
ADAPTER FOR PIPETTES CALIBRATION			

POWER ADAPTOR WITH BATTERY AND CHARGER

The power adapter ZR-02 is designed for powering balances in areas with no access to mains. It features a built-in charger.

Compatible with:
3Yseries - 5h balance operation time
XA/X; AS/X; PS/X - 6h balance operation time
AS/C; PS/C; APP/C - 8h balance operation time

Model			
POWER ADAPTOR WITH BATTERY AND CHARGER -Model ZR-02			

DISPOSABLE PANS

Designed for moisture analyzers, available as a set of 50 pieces.

Compatible with:
MAX; MAC moisture analyzers

Model			
DISPOSABLE PANS(Set of 50pcs)			

SET FOR DETERMINATION OF WATER VAPOUR PERMEABILITY

Set is used for determination of water vapour permeability with various materials, like:clothes,knitted fabric,leather.Permeability of water vapour is a feature which directly determines quality and application possibility of specific material, like clothes, shoes, etc. If they are manufactured from improper materials, with incorrect permeability, they may be unhealthy and unpleasant in use.Using the set with application of moisture analyzer series MAC or MAX the testing procedure gets shortened from 72 hours to just 50 minutes.

Compatible with:
MA.3Y; MAX moisture analyzer

Model			
SET FOR DETERMINATION OF WATER VAPOUR PERMEABILITY			

INFRA RED EMMITER

IR emitter is used in moisture analyzers series MAC and MAX. It is applicable in moisture analyzers with max temperature 160° Celsius.

Compatible with:
MA.3Y; MAX; MAC moisture analyzer

Model			
INFRA RED EMMITER			

CONTROL THERMOMETER

Designed for moisture analyzers.
It enables measurement of temperature with a probe installed on a cable.The control thermometer features fully waterproof casing and automatic switch-off function, preventing from battery discharging.
Powered from batteries: 3 x 1.5V (LR44).
Compatible with:
MAX; MAC moisture analyzers

Model			
CONTROL THERMOMETER - Model GT105k-12			
Calibration of thermometer GT 105k-12			

Additional equipment for laboratory balances

CONTROL THERMOMETER SET FOR MA.3Y

Designed for moisture analyzers – model MA.3Y
It enables measurement of temperature with a probe installed on a cable.The control thermometer features fully waterproof casing and automatic switch-off function, preventing from battery discharging.
Powered from batteries: 3 x 1.5V (LR44).
Compatible with:
MA.3Y moisture analyzers

Model			
CONTROL THERMOMETER SET FOR MA.3Y			
Calibration of thermometer GT 105k-12			

AIR DENSITY DETERMINATION KIT

The set is dedicated for determining air density. It consists of two cylindrically shaped mass standards, and it is designed for use in microbalances MYA, analytical balances XA/3Y& XA/X with 0.01 [mg] accuracy.
Different types of balances use different models of air density determination kit:
For MYA microbalances:
- diameter 8 × 12 mm made of stainless steel
- diameter 12 × 16 mm made of aluminium
For XA.3Y& XA/2X balances:
- diameter 34 × 40 mm made of aluminium
- diameter 24 × 28 mm made of stainless steel

Model			
AIR DENSITY DETERMINATION KIT			

SUITCASE FOR BALANCE

Special design of the suitcase ensures instrument's safe transport while on site. The suitcase is durable for shocks (aluminium construction with internal filling from polyurethane foam).

Compatible with:
PS/X; PS/C; WLC/A2; WTB

Model			
SUITCASE FOR BALANCE - Model W1			

Additional equipment for laboratory balances

ANTISTATIC CABLE

Cable for protective grounding of balances and scales.Facilitates removing electrostatic charges.

Compatible with:
All RADWAG balances and scales.

Model			
ANTISTATIC CABLE - Model PA1			

RS 232 CABLE (BALANCE - COMPUTER)

Compatible with:
All RADWAG balances and scales.

Model			
RS 232 CABLE (BALANCE - COMPUTER) - Model P0108			

RS 232 CABLE (BALANCE –KAFKA PRINTER)

Compatible with:
All RADWAG balances and scales.

Model			
RS 232 CABLE (BALANCE –KAFKA PRINTER) - Model P0136			

RS 232 CABLE (BALANCE –EPSON OR CITIZEN PRINTER)

Compatible with:
MYA; XA/3Y; AS/3Y; PS/3Y; APP/3Y.

Model			
RS 232 CABLE (BALANCE –EPSON or CITIZEN PRINTER) - Model P0151			

Additional equipment for laboratory balances

CAR LIGHTER 12V CABLE

Cable for plugging to car lighter 12V.
Compatible with:
WLY; PUE7 series.
WLC; WTB series.

Model			
CAR LIGHTER 12V CABLE - Model K0047			

WALL MOUNTING KIT

Wall mounting kit model PUE-7-32 is designed for easy mounting of the PUE 7 indicator on wall. The kit can be mounted in two ways, depending on expected angle of tilt of the indicator display.

Compatible with:
PS.3Y; APP.3Y; WLY; PUE7.

Model			
WALL MOUNTING KIT- Model PUE—7-32			

TRANSPONDER CARD SCANNER

Transponder card scanner is used for quick identification and logging of operators to weighing system or identification of products from database. It cooperates with 3Y balances series and systems based on terminals series PUE7.

Compatible with:
WLY; PUE7.

Model			
Transponder card reader CK-01 (for PUE C41H; PUE5; PUE7)			

Additional equipment for laboratory balances

BARCODE SCANNER

Barcode scanner model LS 2208, manufactured by Symbol, is a high quality, hand-held scanner for laser scanning of bar codes. Its main features are very good ergonomics, small dimensions and light weight.

Barcode scanner is applicable in weighing systems for:

- Quick assortment choice in weighing systems;
- Quick operator choice in weighing systems.

Compatible with:
3Y series;
WLY; PUE7.

Model			
BARCODE SCANNER - Model SYMBOL LS2208			

POWER LOOP OUTPUT

RADWAG power loop module 4-20mA is designed for conversion of digital form of mass readout into analog one. Power output is a passive module, i.e. requires external power supply 24 VDC on power loop.

The power loop module can reflect on its output mass indication as:

- direct value (no mark recognition)
- only positive values
- value with mark recognition

Compatible with:

- ***3Y series;***
- ***WLY; PUE7.***
- ***XA/2X; AS/X; PS/X.***
- ***AS/C; PS/C; APP/C; WLC; WTB.***

Model			
POWER LOOP OUTPUT - Model AP2-1 (plastic housing)			

MODULE FOR CONNECTION ADD PLATFORM TO BALANCE

DP-2 Module is designed to increase the functionality of an indicator model PUE 7. With application of the DP2 module, it is possible to connect additional platform to the existing scale. The DP-2 module is installed inside the housing of indicator PUE 7.

Compatible with:
WLY; PUE7.

Model			
MODULE FOR CONNECTION ADD PLATFORM TO BALANCE – Model DP-2			

Additional equipment for laboratory balances

LabelprinterCITIZEN

CITIZEN label printer is a thermal printer designed for printing labels. It is connectable to Radwag indicators and terminals series PUE C41H, PUE 7, HY and PUE 5 series.

CITIZEN CL-S400DT
It is a compact thermal printer dedicated to printing labels, receipts and tags. Despite its compact dimensions, the CL-S400DT features the best equipment of industrial printers: metal printing mechanism, built-in power adapter and multiple communication interfaces and accessories.Printer's display is two-coloured and informs on current printer's status, and simplifies device's configuration.The CL-S400DT printer additionally features a serial port and a USB port. Optionally, the printer may feature parallel port, Ethernet and Wireless LAN.

CITIZEN CL-S521
Printer CL-S521 series is an economic and easy in use thermal printer for labels. It provides very good precision, high reliability and excellent printing performance for reasonable price."Mussel shell" shaped printing mechanism enables exchanging the material by its placing and closing the printing module.Printer components marked with colours simplify its correct use and maintenance, while improved material sensor limits the risk of its accidental displacement. The CL-S521 features a built-in power adapter, therefore there is no thread of accidental unplugging of the device. The CL-S521 printer comes standard with a serial port and a USB port. Optionally, the printer may feature parallel port, Ethernet and Wireless LAN.

CITIZEN CL-S621, CL-S631
Printer CL-S621 series features a modern design and high-end technical specification. It is one of the smallest thermal-transfer printer, offering multiple options for reasonable price. The CL-S621 combines reliability, printing precision, high performance and simplicity of use.The CL-S621 features metal printing module, ensuring very good operating parameters and reliability. Printer components marked with colours simplify its correct use and maintenance, while improved material sensor limits the risk of its accidental displacement. The printer features a built-in power adapter, therefore there is no thread of accidental unplugging of the device. The printer allows using inked ribbons with external or internal beam, and beam's length up to 360 meter with internal diameter 1 inch. A special system used in the printer prevents from ribbon creasing while printing.

CITIZEN CL-S700
CL-S700 is a series of industrial printers for printing labels 118 mm in width and resolution 203 or 300 dpi. Printer's robust housing makes it immune to external mechanical factors, thus making the printer perfectly suited in harsh industrial operating conditions. The CL-S700 features an innovative design, which enables very simple exchange of operating components. In this solution, the printing module can be tilted by 90°.A special system used in the printer prevents from ribbon creasing while printing. The CL-S700 can optionally feature an automatic cutter and label's separator aiding their application process.

CITIZEN CL-S700R
The CL-S700R features an innovative design, where the housing is lifted upwards, therefore the opened printer requires compact area. Access to all printer's functions is provided from its front panel: power-up, operation of menu, and also fitting a roller with material and inked ribbon.The printer comes standard with a peeler and internal rewinder of the material base of printed labels. The flap of the rewinder, as other options of this printer model, is opened to the front. Large LCD graphic panel displays current printer's status and simplifies device's configuration.The CL-S700R features a robust metal housing protecting the printer's components and installed labels against dirt and damage.

Model			
Label printer Citizen CL-S 400DT			
Label printer Citizen CL-S 521			
Label printer Citizen CL-S 621			
Label printer Citizen CL-S 631			
Label printer Citizen CL-S 700			
Label printer Citizen CL-S 700R			

Additional equipment for laboratory balances

Thermalprinter Kafka

Thermal printer "KAFKA" enables dual-direction thermal print with moveable head. Sign construction: 8×8 point matrix. Print speed: 0,75 line/sec. quantity of signs per line: 40, 80. Depending on version, the printer can feature a real time clock, statistic functions and internal rechargeable accumulator (for on-site operation).KAFKA printers are connectable to all RADWAG scales equipped with RS232 interface.

Model			
Thermal printer Kafka 1/RG			
Thermal printer Kafka 1/RG Portable			
Thermal printer Kafka 1/Z/RG			
Thermal printer Kafka 1/Z/RG Portable			
Thermal printer Kafka SQS			

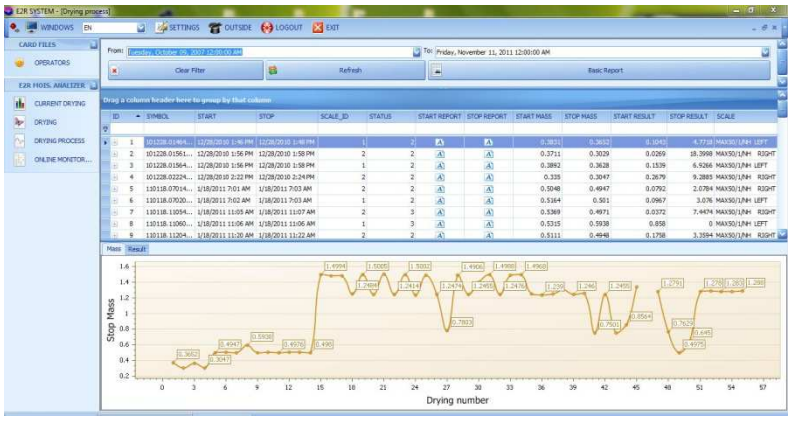
Dot-MatrixprinterEPSON

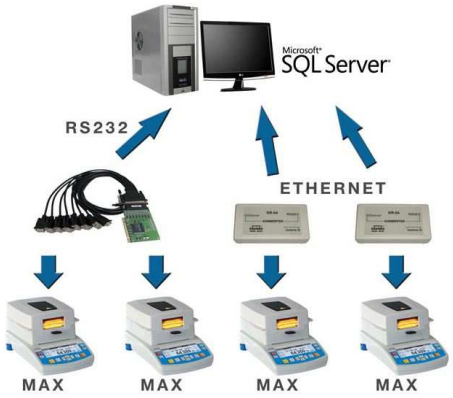
ESPON impact printers (dot-matrix), also known as receipt printers, are applicable for printing on paper 58, 70 or 76 mm in width. They are designed for printing receipt in cooperation with weighing systems (counting and labelling systems). Epson impact printers are connectable to all RADWAG scales equipped with RS232 interface.

Model			
Needle printer Epson TM-U220A			
Needle printer Epson TM-U220B			
Needle printer Epson TM-U220D			

Additional equipment for laboratory balances

E2R MOISTURE PC SOFTWARE

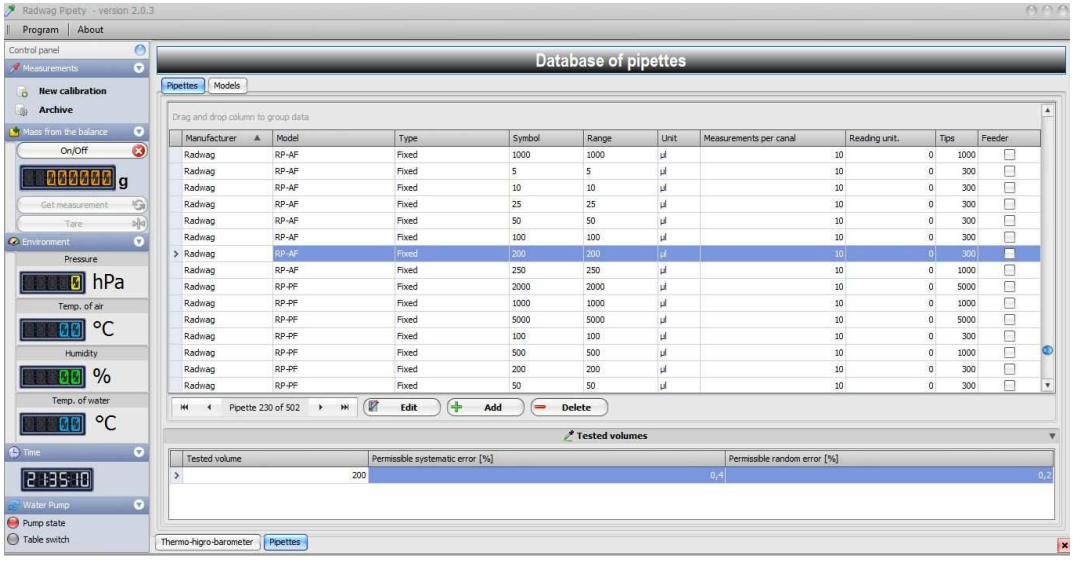




E2R (Network Management Module) allows remote control over measurement process performed on multiple Radwag moisture analyzers(MAX series) connected through Ethernet.
The data is stored into MS SQL 2000 or 2005 computer database. Processed data enable generating graphs and reports of weighing processes.
The software has practical application in laboratories and production plants using RADWAG moisture analyzers for systematic monitoring of production process. This is an indispensible tool in any facility where control, archiving and real-time analysis of drying data is required.

Model			
E2R MOISTURE PC SOFTWARE (single workstation license)			
E2R MOISTURE PC SOFTWARE (multiple workstation license)			

PIPETTES PC SOFTWARE

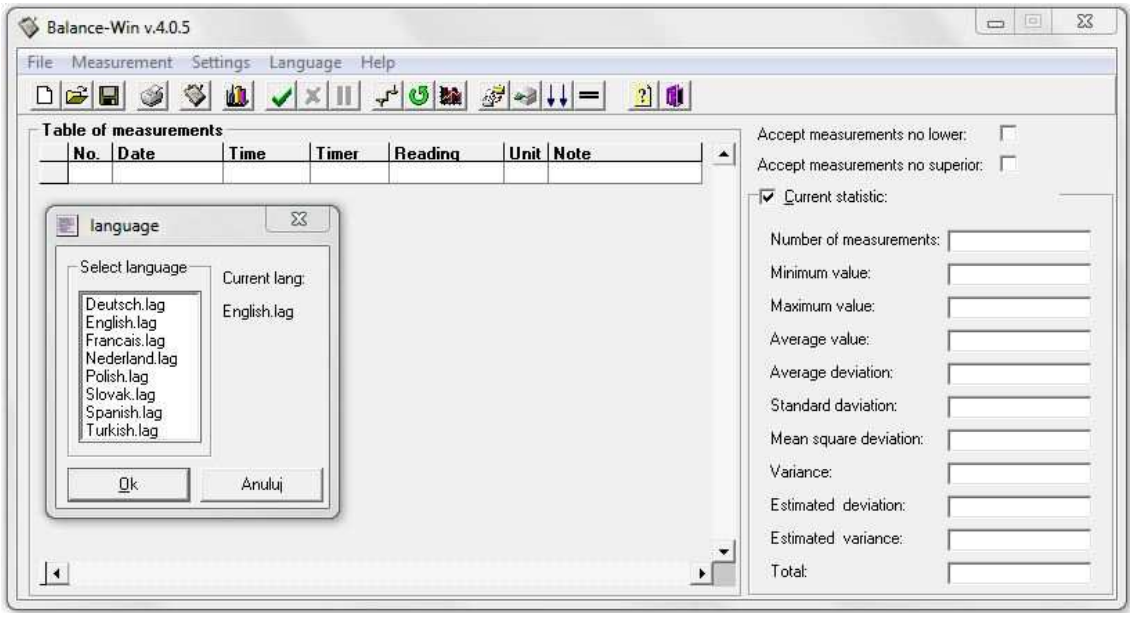


Computer Software PIPETTES is designed for determination of volume measurement errors of pipettes (batchers) in accordance with the standard ISO 8655. The software supports calibration of fixed volume pipettes (single channel) and variable volume pipettes (1, 8, 12 channel).
The program contains both defined database of information on RADWAG pipettes and also enables defining your own models.

Model			
E2R PIPETTES PC SOFTWARE			

Additional equipment for laboratory balances

BALANCE-WIN PC SOFTWARE



The program ensures cooperation of a weighing instrument and a computer:

- Cooperation with one of two serial ports with selection of transmissionparameters;
- Presentation of measuring data carried out in form of a column of numbers or a chart;
- Statistics from a series of weighing;
- Export data to other programs (Excel).

Model			
BALANCE-WIN PC SOFTWARE			

RAD-KEY PC SOFTWARE

Cooperation between a weighing instrument and a computer:

- Replacing a comma with a dot (useful when exporting data to Excel spreadsheet);
- Hot key (function keys from F1 to F12) triggering readout from the scale;
- Values are read as text or numeric.

Model			
RAD-KEY PC SOFTWARE			

Calibration services for balances

CALIBRATION OF WEIGHING INSTRUMENTS

Standard calibration of weighing instruments /covered by accreditation/ refers to determining error of indication in maximally 5 measuring points and eccentricity error of a load placed on instrument's weighing pan. In addition, it is possible to carry out a test on dispersion of indications for 50 % Max and 100 % Max capacity and assessment of conformity with standard EN 45501:1999 "Metrological Requirements for Non-Automatic Weighing Instruments" and European Council Directive 90/384/EEC "Metrological Requirements for Non-Automatic Weighing Instruments".

Calibration and recalibration of balances & scales at RADWAG POLAND factory		
Weighing range		
Ultra- and microbalances d≥0,1µg; max 50g		
Analytical balances d≥0,01mg; max 500g		
Precision balances & industrial scales ;max 0kg - 60kg		
Precision balances & industrial scales ;max 61kg - 300kg		
Industrial scales ;max 300kg - 3000kg		
Additional services		
Preparation for recalibration (adjustment; cleaning; function test)		
Digital calibration certificate (PDF file)		
Minimal weight of sample indication (USP)		

Calibration services for test weights

CALIBRATION OF MASS STANDARDS

Calibration of mass standards refers to determining standard's mass with expanded uncertainty and issuing certificate of calibration. In addition, it is possible to carry out adjustment of a mass standard (determine its parameters within the limits of maximal permissible errors specific for its accuracy class) and issue conformity certificate with requirements as specified by the client.

Class (OIML)	Weight Value
E2	1 mg – 200 g
F1	1 mg – 5 kg
F1	10 kg
F2; M1; M2;	1 mg – 5 kg
F2; M1; M2;	10 kg – 20 kg

Calibration services for pipettes

CALIBRATION OF PIPETTES

Calibration of piston pipettes covers determining indication error of a pipette in a tested volume with determining the expanded uncertainty and issuing certificate of calibration.
Calibration is carried out using gravimetric method, in accordance with standard ISO 8655-6. Additionally, a certificate of calibration can specify calculation of errors and their results as listed in the standard ISO 8655:

- Systematic error e_s– determined in [µl] units and in [%]
- Random error – determined as standard deviation S_p in [µl] units and CV expressed in [%]

Pipette volume		
1µl ≤ V □ 10µl		
10µl ≤ V ≤ 100µl		
100µl ≤ V ≤ 5000µl		

Validation services

Radwag as a renown manufacturer of weighing instruments and weighing systems, among its products and services, offers validation (also known as qualification process) of mass measuring equipment. The offer is directed towards clients in pharmaceutical sector, and it comprises preparation of documentation and carrying out each step of validation process with participation of RADWAG representative:
Installation Qualification (IQ) – process which verifies whether weighing instruments or weighing systems have been installed in accordance with user requirements and manufacturer's documentation, and checks if all documentation has been supplied by the manufacturer.
Operational (OQ) and Process Qualification (PQ) – process which evaluates performance of weighing instruments and weighing systems, their correct operation in accordance with declared technical specification and established acceptance criteria.

RADWAG offers you complete and professional support in carrying out qualification process on new weighing instruments and systems or those already utilized on site. Please contact RADWAG to obtain more information regarding calibration and validation of weighing instruments.

Fully autoclavable automatic pipettes

Radwag pipettes represent a product line described as "liquid handling", designed for fast determination and transport of small volume liquids. They are characterized by high accuracy of dosing, compact and durable construction. Pipette mechanism provides excellent accuracy and repeatability with relatively small forces to be applied when pressing pipette button. All pipettes are checked for the requirements on accuracy and repeatability, according to norms EN ISO 8655:2003. Each pipette has control certificate including test results, and attached user manual describes pipetting techniques. Pipettes series RP-AF and RP-AV should be sterilized as whole device, with no need to re-calibrate the device.

Accessories for pipettes:

es

Fixed volume automatic pipettes RP-AF

Model	Volume	Tips			
RP-AF 2,5	2,5 µl	300 µl			
RP-AF 5	5 µl	300 µl			
RP-AF 10	10 µl	300 µl			
RP-AF 25	25 µl	300 µl			
RP-AF 50	50 µl	300 µl			
RP-AF 100	100 µl	300 µl			
RP-AF 200	100 µl	300 µl			
RP-AF 250	250 µl	1000 µl			
RP-AF 500	500 µl	1000 µl			
RP-AF 1000	1000 µl	1000 µl			
RP-AF 2000	2000 µl	5000 µl			
RP-AF 5000	5000 µl	5000 µl			

Adjustable volume automatic pipettes RP-AV

Model	Volume	Increment	Tips			
RP-AV 0,5-10	0.5-10 µl	0,1 µl	10 µl			
RP-AV 2-20	2-20 µl	0,1 µl	10 µl			
RP-AV 5-50	5-50 µl	0,5 µl	300 µl			
RP-AV 10-100	10-100 µl	0,5 µl	300 µl			
RP-AV 20-200	20-200 µl	1 µl	300 µl			
RP-AV 100-1000	100-1000 µl	5 µl	1000 µl			
RP-AV 500-5000	500-5000 µl	50 µl	5000 µl			

Automatic pipettes with autoclavable lower assembly

Radwag pipettes represent a product line described as "liquid handling", designed for fast determination and transport of small volume liquids. They are characterized by high accuracy of dosing, compact and durable construction. Pipette mechanism provides excellent accuracy and repeatability with relatively small forces to be applied when pressing pipette button.All pipettes are checked for the requirements on accuracy and repeatability, according to norms EN ISO 8655:2003. Each pipette has control certificate including test results, and attached user manual describes pipetting techniques. Pipettes series RP-PF and RP-PV have only the tip ejector and body sterilized. As it is sterilized, and pipette is assembled, it is not necessary to re-calibrate the pipette.

Accessories for pipettes:

es

Fixed volume automatic pipettes RP-PF

Model	Volume	Tips			
RP-PF 5	5 µl	300 µl			
RP-PF 10	10 µl	300 µl			
RP-PF 25	25 µl	300 µl			
RP-PF 50	50 µl	300 µl			
RP-PF 100	100 µl	300 µl			
RP-PF 200	200 µl	300 µl			
RP-PF 250	250 µl	1000 µl			
RP-PF 500	500 µl	1000 µl			
RP-PF 1000	1000 µl	1000 µl			
RP-PF 2000	2000 µl	5000 µl			
RP-PF 5000	5000 µl	5000 µl			

Adjustable volume automatic pipettes RP-PV

Model	Volume	Increment	Tips			
RP-PV 0,2-2,5	0.2-2,5 µl	0,01 µl	10 µl			
RP-PV 0,5-10	0.5-10 µl	0,1 µl	10 µl			
RP-PV 2-20	2-20 µl	0,1 µl	10 µl			
RP-PV 5-50	5-50 µl	0,5 µl	300 µl			
RP-PV 10-100	10-100 µl	0,5 µl	300 µl			
RP-PV 20-200	20-200 µl	1 µl	300 µl			
RP-PV 100-1000	100-1000 µl	5 µl	1000 µl			
RP-PV 500-5000	500-5000 µl	50 µl	5000 µl			

Workstation for Pipettes Calibration

In order to ensure measurement reproducibility, and to meet all the requirements resulting from supervision over measuring equipment and to facilitate the process of pipettes calibration RADWAG recommends effective and ergonomic solution of calibrating automatic pipettes conducted by a user - complete Workstation for Pipettes Calibration.

Purpose:

1. Calibration of automatic pipettes from 1µl to 10ml:
   • with fixed volume
• with adjustable volume
2. Weighing of samples with maximum capacity up to 21g and accuracy d=1µg (in standard weighing chamber - pan ø30mm)

Unit contents:

1. Table for calibration with anti-vibration table
2. Analytical microbalance MYA 21.3Y.P or XA 52.3Y
3. Environmental module:
   • probe for temperature, humidity and pressure measurement
   • probe for water temperature measurement
4. Used water kit:
   • sink for used water (for right or left-handed)
   • container for used water
5. Computer set:
• PC
   • software Pipettes Radwag (pre-installed on PC)
   • LCD monitor
   • keyboard and mouse
6. Power supply
7. Armrests

Type of pipettes that can be used with a workstation for pipettes calibration featuring a microbalance MYA 21.3Y.P:
• RADWAG Automatic pipettes RP-AF, RP-AV, RP-PF and RP-PV – all models;
• **Pipettes with volume from 1 µl to 10 000 µl (10 ml).**

Type of pipettes that can be used with a workstation for pipettes calibration featuring a balance XA 52.3Y:
• RADWAG Automatic pipettes RP-AF: models : „**RP-AF 10”** - „**RP-AF 5000”;**
• RADWAG Automatic pipettes RP-AV: models : „**RP-AV 10-100”** -„**RP-AV 500-5000”;**
• RADWAG Automatic pipettes RP-PF: models: „**RP-PF 10”** - „**RP-PF 5000”;**
• RADWAG Automatic pipettes RP-PV: models: „**RP-PV 10-100”** - „**RP-PV 500-5000”;**
• **Pipettes with volume from 10 µl to 10 000 µl (10 ml)**.

Model			
Workstation for Pipettes Calibration(**with MYA 21.3Y.P**)			
Workstation for Pipettes Calibration (**with XA 52.3Y.A.P**)			

Additional Equipment for automatic pipettes

OMNITIP - Racks

Model	Volume	Box content
R 10	10 µl	10 racks + 960 tips
R 300	300 µl	10 racks + 960 tips
R 1000	1000 µl	5 racks + 480 tips

OMNITIP - Sets

Model	Volume	Set content
ST 10	10 µl	box + 6 racks + 576 tips (starter)
ST 300	300 µl	box + 6 racks + 576 tips (starter)
ST 1000	1000 µl	box + 6 racks + 288 tips (starter)
SR 10	10 µl	10 racks + 960 tips (reload)
SR 300	300 µl	10 racks + 960 tips (reload)
SR 1000	1000 µl	10 racks + 576 tips (reload)
BT 10	10 µl	1000 tips (bulk)
BT 300	300 µl	1000 tips (bulk)
BT 1000	1000 µl	250 tips (bulk)
BT 5000	5000 µl	150 tips (bulk)

Stands for pipettes

Model	Specification
SA 100	white plastic stand for 4 pipettes
SA 200	white plastic stand for 6 pipettes

Single mass standards (in plastic boxes; DKD or RADWAG calibration certificate)

	E1	E2	F1	F2	M1
Mass					
1 mg					
2 mg					
5 mg					
10 mg					
20 mg					
50 mg					
100 mg					
200 mg					
500 mg					

	E1	E2
Mass		
1 mg		
2 mg		
5 mg		
10 mg		
20 mg		
50 mg		
100 mg		
200 mg		
500 mg		

Single mass standards (in wooden boxes; DKD or RADWAG calibration certificate)

	E1	E2	F1	F2	M1
Mass					

Single mass standards (in plastic screwed boxes; DKD or RADWAG calibration certificate)

	E2	F1	F2	M1
Mass				
1 g				
2 g				
5 g				
10 g				
20 g				
50 g				
100 g				
200 g				
500 g				
1 kg				
2 kg				
5 kg				
10 kg				

Sets of mass standards (in wooden boxes; DKD or RADWAG calibration certificate)

r

		E1	E2	F1	F2	M1
Mass	**Quantity of pieces**					
1 mg - 500 mg	12					
1 g - 100 g	9					
1 g - 200 g	11					
1 g - 500 g	12					
1 g - 2 kg	15					
1 kg - 5 kg	4					

Sets of fraction standards and mass standards
Wire standards / knob shape

Special weights

	Name	Range of mass	
	Weights with handle	25 kg& 50 kg	
	Block rectangular weights	5 kg - 50 kg	
	Slotted weights	1 g - 20 kg	
	Hooked weights	1 g - 20 kg	
	Cast iron weights	100 kg - 2000 kg	
	Glass bell jars with base plates	1mg - 50kg	

Accessories for weights

Tweezers – stainless steel with silicon tip				
	105 mm	130 mm	160 mm	300 mm
Tweezers – stainless steelwith carbon fiber tip				
	105 mm	130 mm	160 mm	
Tweezers - carbon				
	105 mm			
Cottongloves (pair)				
Plastic boxes for single mass weights				
	od 1 mg do 20 g	od 50 g do 500 g	od 1 kg do 5 kg	10 kg
Dustbrushes				
	10 × 100 mm	20 × 110 mm	30 × 150 mm	30 × 250 mm